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ABSTRACT

A portrait of the early-adopter of World Wide Web (WWW) courses is painted in the results of a survey of the 71 instructors who had a WWW course listed on the Southern Regional Electronic Campus (SREC) during the first semester of its operation, Spring 1998. Data about their perceptions, practices, concerns, and the institutional norms under which they work were collected. The data collected from the survey yielded a prioritized list of faculty concerns and needs. Institutions must develop the infrastructure to provide technical training, technical support, administrative support, time for faculty to develop and teach these courses, a revised faculty reward system, and reliable computer hardware. The delivery of distance education on the WWW has great potential that cannot be realized until the needs and concerns of the faculty that will develop the courses are met. Contains 15 references. (Author/MES)

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Abstract: A portrait of the early-adopter of WWW courses is painted in the results of a survey of the 71 instructors who had a WWW course listed on the Southern Regional Electronic Campus (SREC) site during the first semester of its operation, Spring 1998. Data about their perceptions, practices, concerns, and the institutional norms under which they work were collected. The data collected from the survey yielded a prioritized list of faculty concerns and needs. Institutions must develop the infrastructure to provide: technical training, technical support, administrative support, time for faculty to develop and teach these courses, a revised faculty reward system, and reliable computer hardware. The delivery of distance education on the WWW has great potential that can not be realized until the needs and concerns of the faculty that will develop the courses are met.

Because instructional delivery on the Internet is such a new application, there is no existing body of research available. For the most part, journal articles address broad policy issues or are anecdotal, describing the implementation of a particular course. The few surveys that have been done are mainly concerned with quantifying the number of courses and the number of students. Dillon and Walsh(1992) conducted an analysis of 255 articles from five major distance education journals. Of these articles, only twenty-four dealt with faculty issues in distance education. Because a committed and well- trained faculty is the key to the successful delivery of distance education, there is a need for basic research in faculty issues related to the delivery of distance education on the Internet.

Rodgers (1983) developed broad categories to classify technology adoptors: innovators, early adoptors, early majority, late majority, and laggards. The early adoptors have a high degree of opinion leadership and the organization looks to them for cues, information, and advice for adopting new technologies (Rodgers, 1983). This valuable knowledge was captured by surveying a group of early adoptors who developed and delivered a course on the WWW to learn from their experiences and identify their needs and concerns.. Data about their perceptions, practices, concerns, and the institutional norms under which they work were collected.

The sample for the study was limited to the instructors of the 77 WWW courses listed on the Southern Regional Electronic Campus (SREC) site for the Spring 1998 semester. This was the first semester of operation for the SREC. The instructors' names and mailing addresses were obtained by following links from the SREC site back to the offering institutions. The 77 listed courses were being taught by 71 different instructors. Surveys were mailed to these instructors. Thirty six (50.7%) responses were received, but five courses were canceled or not offered during Spring 1998, leaving 31 (43.7%) usable surveys.

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The respondents formed a cross-section of postsecondary faculty. Their teaching fields were from various disciplines: 26% social science, 26% humanities, 35% scientific/technical, and 13% business. They also

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taught in a variety of types of institutions: 7% large universities, 58% regional universities, 32% community colleges or technical schools, and 3% correspondence studies.

The instructors surveyed represent an experienced, teaching faculty. They averaged 16.4 years of teaching experience with a range of 1 to 36 years. Sixteen of the 17 instructors, who were currently teaching in a tenure-track position, had already earned tenure. Their typical workload was broken down as follows: teaching 63%, research 8%, public service 11%, and other 18%. The "other" category was mostly administrative duties.

Chi-square tests were made to determine if there was a difference in instructors' concerns based on the discipline (humanity, social science, science/tech, or business) or type of postsecondary institution (large university, regional university, community college or technical school, or correspondence studies). Faculty concerns about web-based distance education were universal. The chi-square tests indicated that almost all differences were not statistically significant. The following table ranks the instructors' concerns in descending order.

Table 1

Concerns Ranked in Descending Order

(Measured on a 5 pt. Likert Scale 1 = Minor Concern 5 = Major Concern)

	Mean	Sd. Dev	% (Choosing 4 or 5)
Sufficient time to develop and maintain course material	4.133	1.074	68%
Technical support	3.710	1.371	65%
Administrative support	3.613	1.383	48%
Sufficient time to interact with students	3.355	1.330	45%
Technical training	3.194	1.352	39%
Student familiarity with computers	3.194	1.108	39%
Equipment problems	3.097	1.274	45%
Academic honesty	2.968	1.378	32%
Necessary equipment available in faculty offices	2.903	1.535	32%
Student access to computers	2.867	1.224	16%
Web course design	2.839	1.241	36%
Student assessment/grading	2.733	1.230	29%
Intellectual property rights	2.700	1.489	32%

Sufficient Time to Develop and Maintain Course Material. As seen in Table 1, the instructors' number one concern was the necessary time to develop and maintain their courses. Sixty-eight percent of the teachers rated this a major concern. The respondents were critically aware of this problem because 81% of them personally developed at least 75% of their courses. A science/technology instructor observed, "It takes a lot of time and effort initially. Also faculty need proper training in online development (curriculum conversion)." A business instructor commented, "Need financial support and release time. Very time intensive."

The reported length of time required to develop a course was difficult to quantify. The amount of time that developers reported was in different units of measurement and some represented full-time effort and others part-time effort. Seven instructors reported their effort in hours of full-time work. The development time ranged from 48 to 300+ hours with a mean of 152 hours. Four instructors reported the time in weeks, with a range of 5 to 6 weeks and a mean of 5.8 weeks. Fifteen instructors reported the time in months of part-time effort. The time ranged from 3 to 18 months with a mean of 6.6 months. Two instructors expressed the development time as "A lot!" and "More than I got paid for." No matter how it was measured, the development time was substantial.

Institutions have recognized the burden of course development for the WWW. Fifty-eight percent of the instructors surveyed received release time or financial incentive for developing the course. The most common incentive was release time. Nine (29%) instructors received a one- course load reduction while developing the course. Nine (29%) instructors received financial compensation ranging from $1,500 to $11,000, with a mean of approximately $3,600.

Few rewards exist for the time consuming task of maintaining the course. Only four instructors reported receiving any compensation. One received a one-time-only one-course load reduction, one was "discussing" the issue, and two, who were paid on a correspondence course model, received a small amount per student.

Eleven (35%) of the instructors reported receiving additional help or incentives for teaching the course. One was assigned a graduate assistant. Two received a one-course load reduction. Two were paid a lump sum, $2,500 and $3,500, for teaching the course. Six were paid per student enrolled or lesson graded.

Technical Support/Technical Training. Technical support and technical training ranked among the top five concerns. 65% of the instructors rated technical support a major problem despite the fact that 67% of the instructors reported having a department on campus to assist in the technical development of a web course. Only two instructors commented that their support department was "excellent" or would help with "any need". The following is a typical comment: "Lack of technical support staff. I am responsible for all maintenance."

There is a problem matching faculty needs with technical support services. Why? This is an area that requires further study. The instructors were aware that technical support services existed but they were not taking advantage of the services, had difficulty accessing the services, or the services were inadequate.

Technical training was also reported to be inadequate. Sixty-one percent of the instructors surveyed received no training in web-course development and only four instructors, out of the 12 who had received any training, reported that the training was adequate. A social science instructor commented, "[I attended] conference sessions and workshops [and did a] tremendous amount of reading. Didn't "receive" training - got it myself."

Administrative Support. Administrative support ranked third as a major concern. Administrative support encompasses such issues as the institutional climate for distance education, and promotion/tenure. The SREC WWW distance education courses were being taught by curriculum pioneers. Forty-four percent of the courses were taught for the first time in Spring 1998 and 84% of the courses were taught three or fewer times. Only two instructors reported that they felt administrative pressure to develop web courses. The spirit of the pioneering instructor was expressed in the following comment: "[I] decided to join the computer age & enhance [my] skills vs. going for early retirement or being left behind."

But not all comments were positive. The administration has expressed its commitment to distance education, but often the supporting institutional infrastructure has not yet been created. A regional university instructor complained, "The institutional climate is good. The department climate stinks. This university has made a commitment to distance education, but most of my colleagues are resisting. I am a renegade!" A community college instructor commented, "There are a lot of unanswered questions about web-based courses at our school. I did the course because I am interested in it - not because of financial support or administrative pressure."

Concerns about capping course enrollment and compensation for teaching large classes were often expressed. The following comments were from instructors at regional universities:

- Concern - allowing too many to enroll. Administrative folk want to enroll large number[s] in web course.
- Some administrators see only the potential cost savings, not the opportunity to do more and better teaching.

Faculty members generally support the concept of using technology to improve instruction, but using technology to reduce costs is a volatile political concern. They argue that reducing costs with the aid of technology "translates into reducing the number of faculty members and increasing student-faculty ratios" (DeSieno, p. 2). Teaching is not a mechanical process that can be delivered without human interaction.

However, evidence of large enrollments was not supported by the data gathered. The class sizes ranged from 2 - 150. The median class size was 21 and only one course enrolled more than 30 students.

Forty-eight percent of the instructors reported that developing and teaching a WWW course did not count toward promotion or tenure and an additional 26% reported that they did not know if it counted. There can be little incentive to develop a WWW course if it does not count in faculty productivity.

Nowhere are the challenges more pivotal than in the area of institutional support for faculty. Faculty members and administrators must work together in identifying and resolving the issues that inhibit systematic use of distance education in meeting academic goals.

Sufficient Time to Interact with Students. Sufficient time to interact with students was ranked as a major concern by 45% of the instructors surveyed. This issue is closely related to the changing role of the instructor in distance education. The teacher becomes a mentor rather than a sage and directs student learning. This requires frequent communication with the students. The most common communication mediums cited in the survey were: e-mail, fax, listserv, bulletin board, chat room, phone, and postal service. The following comment emphasizes the time requirements of teaching on-line:

- With being on-line, I have to keep constant contact with the class to make sure that they are on schedule. Some of them are doing well, others are not due to the lack of responsibility on their part. Grading is taking a great deal of effort since it is done on computer.

Student Familiarity with Computers/Equipment Problems. These are inter-related concerns that are also institutional problems. For a web based distance education program to be successful the institution must provide a reliable computer network with convenient and timely remote access. The students must also be provided with training in basic computer literacy and have a resource to contact when there are technical problems. One instructor commented, "Our institution is having problems ... the computer system is not 100% reliable for an on-line course to be fully successful."

The instructor has no direct control over the reliability of the hardware, but an unreliable computer system can adversely affect student satisfaction with the course. Because faculty- teaching evaluations are dependent on student satisfaction, the instructor is ultimately held responsible for the unreliable system.

Conclusions . In the pilot study the survey instrument successfully quantified the needs and concerns of the pioneering SREC instructors who developed and taught a distance education course on the WWW. Institutions must develop the infrastructure to provide: technical training, technical support, administrative support, time for faculty to develop and teach these courses, a revised faculty reward system, and reliable computer hardware. Faculty concerns about web-based distance education were universal and not significantly different based on the discipline (humanity, social science, science/tech, or business) or type of postsecondary institution (large university, regional university, community college or technical school, or correspondence studies).

One of the respondents commented on the status of web-based distance education: "Widespread understanding of the potential is yet to materialize. There is considerable fear of the unknown." The delivery of distance education on the WWW has great potential that can not be realized until the needs and concerns of the faculty that will develop the courses are meet.

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